prevent flawed software from bringing down the Open IP Services Platform 30.

[0060] The Open IP Services Platform 30 is also operated by a multi-tasking operation system. In the presently preferred embodiment, a stable and secure OS is desired. The Open IP Services Platform 30 is currently operated using FreeBSD or Linux. However, other operating systems such as WINDOWS XP(TM) cane be used with modifications to the management software of the Open IP Services Platform 30. It is also important to understand that the OS operation within the Open IP Services Platform 30 is not what is typically referred to as an embedded OS. An embedded OS is often a smaller and less capable version of the complete OS. The present invention utilizes the complete OS so that all capabilities of the OS are available. These capabilities include the all-important security features.

[0061] The Operating System 52 executes third party applications 54, with the global rules 56 including management, statistics, and Quality of Service flow rules, and network services rules 58. Network service rules 58 include restrictive flow control, security, a DNS server,

file services, bandwidth metering, a DHCP server, a firewall, and external service packs.

[0062] The Operating System 52 communicates with the interface 60 of the SBC 34. This communication is controlled via policy interface 62. Virtual interconnects 64 handle the translation within the SBC 34 of mapping virtual NIC instantiations 66 to physical port instantiations 66.

[0063] Presently, the network switching node devices come in two different system configurations, the REACTOR(TM) and the REACTORPRO(TM). There are several common features in these products including: two Gigabit GBIC Ports 42, twenty four 10/100 (Base T) Ports 44, a single 733 MHz PENTIUM(TM) III CPU 34 that is ungradable, 32 MB of RAM and 32 MB of Flash RAM 38, both ungradable, two USB ports, one serial port that is optional, and two PC card slots 46, type 2. The devices are different in that there are two PCI bus slots, and an optional hard drive on the REACTOR(TM). In contrast, the REACTORPRO(TM) includes four PCI bus slots, and comes with two RAID bays for up to 6 hard drives, and a redundant power supply. Both systems are configurable via local PC, serial port,

modem, or via a network connection. More control is possible, however, using a configuration program that operates in the WINDOWS(TM) environment.

[0064] It is observed that presently both systems run FreeBSD 4.2 and Linux Kernel 2.2.17 (RedHat 6.2 or 7.0, Mandrake 6.2) Operating Systems. However, a PC running any Operating System can communicate with the Open IP Services Platform 30 via Telnet or a command line interface. But the software configuration tool, COREVISTA WEB(TM), is currently a WINDOWS(TM) application.

[0065] Other important statistics of the systems are that the address table size is 16K IP and 8K IPX addresses with no per port limits, and more available via aging. The systems also include an RS-232 console port that supports remote monitoring and diagnostics via a DB-9 (DTE) connector. Pre-set configurations include, but are not limited to, internal and external T1, DSL modem, analog modem, and others. A store-and-forward forwarding mode is available. Filtering modes are destination-based, multicast address-based, or port based. 1K virtual LAN support is also provided.

[0066] Upgrades to the Open IP Services Platform 30 are